

=> fil reg

FILE 'REGISTRY' ENTERED AT 17:20:58 ON 14 OCT 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2005 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 12 OCT 2005 HIGHEST RN 865114-63-2

DICTIONARY FILE UPDATES: 12 OCT 2005 HIGHEST RN 865114-63-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

```
*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*
*****
```

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 17:21:01 ON 14 OCT 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 14 Oct 2005 VOL 143 ISS 17

MEI HUANG EIC1700 REM4B28 571-272-3952

01/09/2006

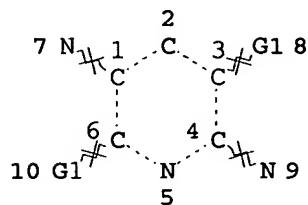
FILE LAST UPDATED: 13 Oct 2005 (20051013/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que

L2 STR



VAR G1=O/S/N

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

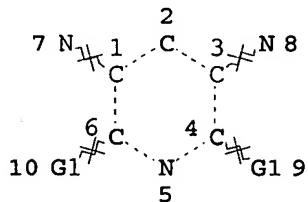
GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L3 STR



VAR G1=O/S/N

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

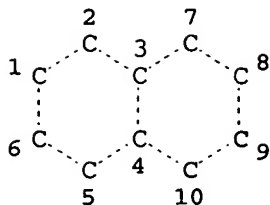
GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L6 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RSPEC I  
 NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE  
 L8 SCR 2043  
 L10 2 SEA FILE=REGISTRY SSS FUL L6 AND (L2 OR L3) AND L8  
 L11 3 SEA FILE=HCAPLUS L10

=> d l11 bib abs ind hitstr 1-3

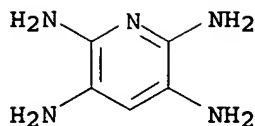
L11 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1973:454044 HCAPLUS  
 DN 79:54044  
 TI Acid addition salts of 2,3,5,6-tetraaminopyridine  
 IN Gerber, Arthur H.  
 PA Horizons, Inc.  
 SO U.S., 5 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3740410	A	19730619	US 1970-92154	19701123
	US 3804804	A	19740416	US 1971-151601	19710609
	US 3838154	A	19740924	US 1973-324282	19730117

PRAI US 1970-92154 A 19701123  
 AB 2,6-Diamino-3,5-dinitropyridine (I) [34981-11-8] was prepared from 2,6-diaminopyridine (II), and was catalytically reduced to the 2,3,5,6-tetraaminopyridine (III) free base (and its acid salts), which were polym. to form thermally stable polymers. Thus, a mixt. of 250 cm<sup>3</sup> H<sub>2</sub>SO<sub>4</sub> and 54.5 g II at <25.deg. was blended with 30 cm<sup>3</sup> H<sub>2</sub>SO<sub>4</sub> and 76 g HNO<sub>3</sub> during 2 hrs at 10 +-5.deg.. The soln. was

heated to 70.deg. during 45 min and heated at 75.deg. for 30 min to obtain 63 g I, which was dissolved (15 g) in 100 cm<sup>3</sup> hot H<sub>3</sub>PO<sub>4</sub>-MeOH soln. The soln was cooled to 25.deg., diluted with 135 cm<sup>3</sup> HCO<sub>2</sub>H (saturated with HCl) and 15 cm<sup>3</sup> HCl, and mixed with 5% Pd/charcoal (2.88 g). The mixt was heated at 75.deg. and 55 psi H, filtered, and the filtrate added to a THF-HCl soln to ppt. the III HCl salt. A soln. contg. 333 g 116% deoxygenated polyphosphoric acid and 3.32 g III.HCl was heated at 75-80.deg. in N, blended with 4.05 g 1,4,5,8-naphthalenetetracarboxylic acid [128-97-2], and the mixt. heated 10 hr at 180.deg. to yield 3.4 g heterocyclic polymer, which required > 2 hr heating at 1000-1100.deg. in an open crucible for complete combustion.

IC C07D  
INCL 260295000S  
CC 35-2 (Synthetic High Polymers)  
ST pyridine tetraamino naphthalenecarboxylic polymn; aminonitropyridine  
prepn aminopyridine  
IT Heterocyclic compounds  
RL: USES (Uses)  
(polymers, from tetraaminopyridines and aromatic carboxylic  
compsd.)  
IT Heat-resistant materials  
(tetraaminopyridine-aromatic polycarboxylic acid polymers)  
IT 37367-58-1P 41488-65-7P 91-19-0D, Quinoxaline, derivs.,  
polymers  
RL: PREP (Preparation)  
(manuf. of thermally-stable)  
IT 141-86-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(nitration or chloroformylation of)  
IT 4936-27-0P 34981-10-7P 34981-11-8P 37367-31-0P 37367-45-6P  
37406-32-9P 37406-34-1P 38926-45-3P 39132-54-2P 39132-55-3P  
39365-94-1P  
RL: PREP (Preparation)  
(prepn. of)  
IT 541-41-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with diaminopyridine)  
IT 37367-58-1P  
RL: PREP (Preparation)  
(manuf. of thermally-stable)  
RN 37367-58-1 HCAPLUS  
CN 1,4,5,8-Naphthalenetetracarboxylic acid, polymer with  
2,3,5,6-pyridinetetramine trihydrochloride (9CI) (CA INDEX NAME)  
  
CM 1  
  
CRN 34981-10-7  
CMF C5 H9 N5 . 3 Cl H

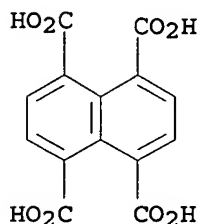


● 3 HCl

CM 2

CRN 128-97-2

CMF C14 H8 O8



L11 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1973:125353 HCAPLUS

DN 78:125353

TI Heterocyclic polymers

IN Gerber, Arthur H.; Koch, Stanley D.; Adams, John S., Jr.

PA Horizons Research Inc.

SO Ger. Offen., 31 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	

PI	DE 2166070		19721207		
----	------------	--	----------	--	--

	CA 973554			CA	
--	-----------	--	--	----	--

	GB 1361840			GB	
--	------------	--	--	----	--

PRAI	US 1970-97419		19701230		
------	---------------	--	----------	--	--

AB 2,3,5,6-Tetraaminopyridine (I) [38926-45-3] optionally contg. another tetraamino compd. was reacted with a polycarboxylic acid, a benzoquinone, or an arom. diglyoxalyl compd. to form thermally stable heterocyclic polymers useful as fibers and films. Thus, 3.32 g I.3HCl was treated with 333 g 116% polyphosphoric acid at .sim.75.deg., and the mixt. was blended with 4.05 g 1,4,5,8-naphthalenetetracarboxylic acid. The soln. was heated 10 hr at 180.deg. to yield 2,3,5,6-tetraaminopyridine-1,4,5,8-

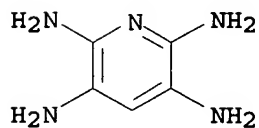
naphthalenetetracarboxylic acid copolymer [38905-07-6], polymer, which required >2 hr at 1000-1100.deg. to completely combust. I was prepd. by nitrating 2,6-diaminopyridine and then reducing the dinitro product.

IC C08G  
CC 36-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 27  
ST heterocyclic polymer aminopyridine; naphthalenecarboxylic acid heterocyclic polymer  
IT Ring closure and formation  
(in polymn. of aminopyridine with naphthalenetetracarboxylic acid)  
IT Polymerization  
(ring closure in, of aminopyridine with naphthalenetetracarboxylic acid)  
IT 37367-31-0P 37367-45-6P 38905-07-6P 41488-65-7P  
41488-81-7P  
RL: PREP (Preparation)  
(manuf. of, cyclization in)  
IT 141-86-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(nitration of)  
IT 4936-27-0P 34981-11-8P 37406-32-9P 37406-34-1P 38926-45-3P  
39132-52-0P 39365-94-1P 41344-47-2P 41638-07-7P  
RL: PREP (Preparation)  
(prepn. of)  
IT 124-63-0 541-41-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with diaminopyridine)  
IT 38905-07-6P  
RL: PREP (Preparation)  
(manuf. of, cyclization in)  
RN 38905-07-6 HCAPLUS  
CN 1,4,5,8-Naphthalenetetracarboxylic acid, polymer with  
2,3,5,6-pyridinetetramine (9CI) (CA INDEX NAME)

CM 1

CRN 38926-45-3

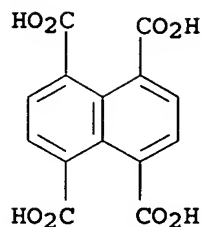
CMF C5 H9 N5



CM 2

CRN 128-97-2

CMF C14 H8 O8



L11 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1973:98276 HCAPLUS

DN 78:98276

TI Heterocyclic polymers

IN Gerber, Arthur H.; Koch, Stanley D.

PA Horizons Research, Inc.

SO Ger. Offen., 68 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2228067		19721228		
	US 3804804		19740000	US	
	US 3838154		19740000	US	
PRAI	US 1971-151601		19710609		
AB	Sol. polymers are prepd. from pyridine or bipyridine tetramines and arom. polycarboxylic acids, which are converted by heat to chem.- and heat-resistant products. Thus, heating 4.96 g 2,3,5,6-tetraaminopyridine trihydrochloride [34981-10-7] and 3.32 g isophthalic acid in 240 g 116% polyphosphoric acid 20 hr at 180.deg. gives 4.4 g isophthalic acid-2,3,5,6-tetraaminopyridine copolymer [39151-97-8]. The polymer is pptd. from H3PO4-HOAc by H2O and heated 4.5 hr at 220-5.deg. to give 3.1 g product showing wt. loss 3% at 500.deg..				
IC	C08G				
CC	35-3 (Synthetic High Polymers)				
	Section cross-reference(s): 27				
ST	pyridine amino copolymer; tetraaminopyridine copolymer; isophthalic acid copolymer; benzimidazole deriv polymer; heat resistance polymer				
IT	Heat-resistant materials (heterocyclic polymers, contg. tetraaminopyridine)				
IT	Adhesives (hot-melt, acrylic polymer-epoxy compd. reaction products as thermally stable)				
IT	Epoxides Epoxy resins RL: USES (Uses) (reaction products with acrylic polymers, for hot-melt adhesives)				
IT	2-Propenamide, polymer with 2-ethylhexyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenenitrile, reaction products with epoxy resins 2-Propenenitrile, polymer with 2-ethylhexyl 2-propenoate, methyl				

2-methyl-2-propenoate and 2-propenamide, reaction products with epoxy resins

2-Propenenitrile, polymer with 2-ethylhexyl 2-propenoate, methyl 2-methyl-2-propenoate and oxiranylmethyl 2-methyl-2-propenoate, reaction products with epoxy resins

2-Propenoic acid, 2-ethylhexyl ester, polymer with methyl 2-methyl-2-propenoate, 2-propenamide and 2-propenenitrile, reaction products with epoxy resins

2-Propenoic acid, 2-ethylhexyl ester, polymer with methyl 2-methyl-2-propenoate, oxiranylmethyl 2-methyl-2-propenoate and 2-propenenitrile, reaction products with epoxy resins

2-Propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with ethenylbenzene and oxiranylmethyl 2-methyl-2-propenoate, reaction products with epoxy resins

2-Propenoic acid, 2-methyl-, methyl ester, polymer with 2-ethylhexyl 2-propenoate, 2-propenamide and 2-propenenitrile, reaction products with epoxy resins

2-Propenoic acid, 2-methyl-, methyl ester, polymer with 2-ethylhexyl 2-propenoate, oxiranylmethyl 2-methyl-2-propenoate and 2-propenenitrile, reaction products with epoxy resins

2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with 2-ethylhexyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenenitrile, reaction products with epoxy resins

2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and 2-methylpropyl 2-methyl-2-propenoate, reaction products with epoxy resins

Benzene, ethenyl-, polymer with 2-methylpropyl 2-methyl-2-propenoate and oxiranylmethyl 2-methyl-2-propenoate, reaction products with epoxy resins

Oxirane, (chloromethyl)-, polymer with 4,4'-(1-methylethylidene)bis[phenol], reaction products with acrylic polymers

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane, reaction products with acrylic polymers

RL: USES (Uses)  
(adhesives, thermally stable hot-melt)

IT 51-17-2DP, 1H-Benzimidazole, derivs., polymers 91-19-0DP, Quinoxaline, derivs., polymers 37367-29-6P 37367-30-9P 37367-31-0P 37367-45-6P 37367-46-7P 37367-51-4P 37367-57-0P 37367-58-1P 37367-60-5P 37367-62-7P 39955-70-9P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(heat-resistant, manuf. of)

IT 141-86-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
(nitration of)

IT 4936-27-0P 34981-10-7P 34981-11-8P 37406-32-9P 37406-34-1P 38926-45-3P 39132-55-3P 39893-01-1P 39893-02-2P 39893-04-4P 39893-05-5P 40212-44-0P 40865-40-5P

RL: PREP (Preparation)  
(prepn. of)

IT 37367-58-1P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(heat-resistant, manuf. of)

RN 37367-58-1 HCAPLUS

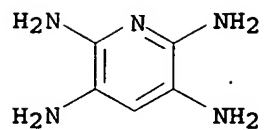
CN 1,4,5,8-Naphthalenetetracarboxylic acid, polymer with 2,3,5,6-pyridinetetramine trihydrochloride (9CI) (CA INDEX NAME)



CM 1

CRN 34981-10-7

CMF C5 H9 N5 . 3 Cl H

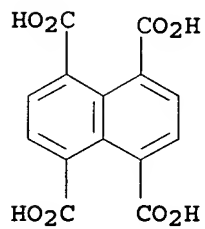


●3 HCl

CM 2

CRN 128-97-2

CMF C14 H8 O8



=&gt;